A BEHAVIORAL APPROACH TOWARD ADULT HEARING AID ORIENTATION

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According to the ASHA Committee on Rehabilitative Audiology (1974), audiologic habilitation is often contingent upon optimal use of amplification. The audiologist's responsibility in assisting the hearing impaired adult adjusting to use of a hearing aid is ill-defined, however. There appears to be little agreement among audiologists regarding hearing aid orientation program philosophy, objectives, procedures, or the responsibilities of the otologist, audiologist, hearing aid dealer, and hearing aid candidate.

Programs described in the literature have served the purpose of meeting the needs of their time and in providing a basic framework upon which to develop future programs (Hughson and Westlake, 1944; Carhart, 1946; and, Johnson and Siegenthaler, 1951). For the most part, these programs were created to fulfill the needs of relatively stable military populations. Northern, et. al., (1968) suggest significant attitudinal and motivational differences between military and civilian adults in their satisfaction from the use of a hearing aid. Unlike many hearing aid users in these military programs, today's typical adult hearing aid consumer often is master of his own fate. He ultimately decides for himself whether or not sufficient benefit is derived from a hearing aid to warrant its purchase (Rassi and Harford, 1968). He must be convinced the advantages of using the hearing aid will outweigh possible psycho-social and/or emotional conflict sometimes accompanying a change in self-image. He must be motivated to accept his hearing loss and all of its ramifications. He must also be advised to seek professional assistance in managing communication problems associated with his hearing loss and adjusting to the use of a hearing aid.

The audiologist, in providing advice to the hearing aid consumer, is dependent upon appropriate feedback from the advisee. In order to provide meaningful solutions to the problems of the hearing impaired, the audiologist must have an objective measure of the effectiveness of his recommendations. Ideally, he should witness the outcome of his own suggestions. To do this he must maintain a working relationship with the hearing aid candidate during his adjustment period. To facilitate adjustment in a quantifiable manner, the following approach toward hearing aid orientation is proposed.

PROGRAM DESCRIPTION

The purpose of this program is to organize the activities of the audiologist in instructing and advising the adventitiously hearing impaired adult in adjusting to his newly acquired hearing aid. The goals of the program are:

1. To develop a positive attitude toward wearing a hearing aid by exploring its use in controlled listening situations.
2. To operate the aid correctly and remedy minor malfunctions.
3. To identify the benefits and limitations of the acquired aid.
4. To improve auditory communication skills by reducing specific deficits in auditory reception, discrimination, tolerance, or other relevant areas.
5. To adjust to any change in self-image by incorporating use of the aid in everyday listening situations.
6. To assume responsibility for long range or continuing adjustment by terminating the orientation program.

The program goals are to be achieved in three distinct phases. Each phase naturally evolves from the preceding phase. Progression to each succeding phase is dependent upon meeting specified minimal criteria.

Phase One. The introductory phase begins when the hearing impaired adult acquires his hearing aid and either admits to an adjustment problem or otherwise indicates an interest in participating in an orientation program. The primary emphasis in this first phase is to accomplish program goals one, two, and three (developing proper attitude; understanding operation and troubleshooting procedures; and, understanding the aid's benefits and limitations). The hearing impaired adult is first informed of the program's overall objectives and procedures. If he has not already shared his difficulty and/or concerns in adjusting to his hearing aid with his spouse (or a close friend), he should be encouraged to take this step. The spouse (friend) is often a motivating force in hearing aid adjustment. The audiologist might confer with this person to emphasize the importance of his role in helping the hearing impaired adult accept the outward display of his hearing handicap. Strong moral support will help promote a positive attitude toward hearing aid use and expedite the adjustment process. By actively participating in orientation program exercises, the spouse (friend) may better empathize with the hearing impaired adult and better understand the ramifications of his particular hearing handicap.

At times it is necessary to collect supplementary audiological information to gain greater insight into the hearing impaired adult's chief concerns as well as to obtain baseline data upon which to measure the success of treatment. The extent and type of additional testing must be individually determined for each hearing impaired adult. While gathering additional information it may be appropriate for the audiologist to discuss questions regarding the cause, nature, non-audiological treatment, prognosis, etc., of the hearing loss incurred. It is also advantageous for the audiologist to inquire about the typical daily activities of the new hearing aid user so that an appropriate orientation program might be planned.

Once all necessary background information has been obtained, the program concentrates on use of the hearing aid itself. The uses and limitations of the newly acquired aid are explained and demonstrated by the audiologist. Component parts and controls are identified with spe-

cial attention to usage at the recommended settings. Electroacoustic characteristics and/or manufacturer's specifications are considered in conjunction with personal audiometric data. The importance of routine care is also stressed in terms of this information. Basic care, operating and troubleshooting procedures are discussed and demonstrated by the audiologist. This information is presented at the estimated level of sophistication and interest of the new hearing aid user. Individual concerns are discussed along with the audiologist's demonstrations of the general benefits and limitations of the newly acquired aid.

Personal vanity is often an important consideration. Advice concerning how to wear the aid with maximum operating efficiency and minimum effect on self-image should be provided by the audiologist.

Evaluation of the integrity of the entire auditory system is basic to a meaningful orientation program. Results of performance on measures of general auditory reception, discrimination, localization, tolerance, etc., when considered along with the new user's chief complaint help formulate individual program objectives. Use of standardized procedures are preferred whenever possible. Low level-high success listening experiences taking the above data into consideration should be provided to bolster those with low self-confidence. Examples of experiences allowing the new hearing aid user to observe, explore, and react to a variety of auditory stimuli under ideal listening conditions have already been documented (Dirks and Carhart, 1962; Harford and Barry, 1965; and Newby, 1972). Performance during these activities will alert the audiologist to the hearing aid user's specialized needs.

By this point, it should be apparent whether the hearing aid orientation program is appropriate or a more comprehensive audiologic habilitation program is indicated. If further counseling, auditory training, speechreading, speech therapy, speech conservation, voice therapy, social identification with other hearing impaired adults, or additional related assistance is required, a more extensive audiologic habilitation program is necessary. The desirability and feasibility of such a program should be discussed with the hearing impaired adult.

Each phase of this hearing aid orientation program may include as many sessions or meetings as necessary to meet the interests, needs, and abilities of the individual participants. Although each individual may progress through each phase at his own pace, it is suggested that a "time-off" period be scheduled between Phases One and Two to allow the new hearing aid user to explore the use of his aid in a variety of commonly encountered everyday listening situations. Feedback from these experiences should prove to be of value to the audiologist in helping him better understand the problems of the new hearing aid user as well as enable him to weigh the appropriateness of his recommendations. In some instances it may be necessary to structure this interphase period by suggesting observations to make and situations to explore. Questions posed by the following inventories may help structure these experiences:

1. Bronfenbrenner Hearing Attitude Scale (Levine, 1960).
2. Hearing Handicap Scale (High, Fairbanks, and Glorig, 1964).
3. Hearing Measurement Scale (Noble and Atherley, 1970).
4. Self-Report Listening-Efficiency Scale (Michigan State University Speech Clinic, undated).

Performance criteria for meeting goals one, two, and three can be established for each participant independently and measured by the number of "yes" responses to the following questions:

1. Does the hearing impaired adult understand the goals of the hearing aid orientation program?
2. Does he appear well-motivated toward wearing his newly acquired hearing aid?
3. Does he have a positive attitude toward wearing his aid in a variety of everyday situations?
4. Does he have the support of his spouse or a close friend?
5. Does he know how to operate and care for his aid?
6. Does he wear his aid appropriately?
7. Does he know how to find and correct minor hearing aid malfunctions?
8. Does he know the benefits and limitations of his aid?
9. Does he explore use of the aid in controlled situations?
10. Is he willing to continue to explore use of the aid in a variety of everyday situations?

Phase Two. This phase concentrates on use of auditory training activities to achieve program goal number four (improving specific auditory communication skills). At first, all interim questions are discussed and listening experience questionnaire responses are reviewed. Follow-up activities are planned and executed and, if necessary, these activities include counseling for physical, psycho-social, and/or emotional problems associated with hearing aid use.

Auditory training activities should provide relevant practice in improving selected auditory skills. In order to illustrate some of the difficulties encountered by the hearing aid user, a report of a recent survey is presented.

A group of ten adult (four male and six female) experienced hearing aid users enrolled in an audiologic habilitation program at the University of Illinois at Urbana–Champaign was polled. Although the number was small, their mixed and sensorineural hearing losses covered a diversified hearing loss spectrum including mild-moderate gently sloping loss, mild-severe gently sloping and precipitous loss, moderate flat loss, moderate-severe gently sloping loss, and a mild-moderate-mild trough shaped loss. They were asked to indicate how often they experienced difficulty recognizing, associating, differentiating, or localizing everyday sounds and noises while wearing their hearing aids. The results revealed each person demonstrated some difficulty in each of the two main categories of experiences:

I. *At Home*

1. Doorbell ringing
2. Someone knocking at the door
3. Alarm clock ringing
4. Telephone ringing
5. Water running
6. Doors slamming
7. Someone pounding nails
8. Vacuum cleaner running
9. Toilet flushing
10. Water boiling
11. Tea kettle whistling
12. Chairs moving on hard floor
13. Someone setting a table (noise of plates, silverware, glasses, etc.)
14. Washing machine running
15. Footsteps
16. Hearing a baby cry in another room
17. Hearing a baby cry in the same room
18. Someone whistling or singing in same room
19. Listening to the news on the radio or TV in a quiet room
20. Listening to music on the radio in a quiet room
21. Listening to music on the radio or TV in a noisy room
22. Listening to the news on the radio or TV in a noisy room

II. *Away From Home*

1. Dogs barking
2. Church bells ringing
3. Emergency vehicle sirens
4. Motorcycles
5. Railroad warning signals
6. Train whistle
7. Musical Instruments playing
8. Car horns
9. Airplane flying overhead
10. Cars approaching
11. Ice cubes in a glass
12. Typewriters
13. Elevator bells
14. Birds chirping
15. Wind blowing
16. Someone approaching from behind on a quiet street
17. Someone approaching from behind in a supermarket, department store, or restaurant
18. Someone approaching from behind on a noisy street

Although all of these experiences did not share equal importance with each adult surveyed, this account of their difficulties was used along with previously collected information to rank individual instruc-

tional priorities, formulate behavioral objectives and, in general, structure their auditory training program. All activities continually reflected the hearing aid user's changing level of performance. This approach worked well with the experienced users and could easily be applied to new hearing aid users.

During the second phase, the audiologist should be prepared to counsel the hearing impaired adult in educational, vocational, social, and family problems associated with hearing aid use or the auditory deficit. In counseling the hearing impaired adult, the audiologist should strive to maintain (or re-establish) the new user's positive attitude, especially when immediate satisfaction from wearing the aid has not been realized. Matters outside the realm of the audiologist's expertise should be referred to the appropriate specialist.

The new hearing aid user may be interested in additional consumer information. He may have questions concerning service policies, guarantees, purchasing batteries, long term maintenance, insurance, etc. The audiologist should be prepared to supply all requested information or refer to an appropriate source.

The primary goal of Phase Two has been met when the new hearing aid user is able to demonstrate measurable improvement in specific auditory communication skills. Areas of improvement and criterion levels of performance are individually determined.

Phase Three. Activities during the final phase are designed to meet program goals five and six (overall satisfactory adjustment). Major activities will emphasize improving communication skills in difficult listening situations. The types of activities will be determined by individual needs.

For example, the Illinois survey group was asked to rate the amount of difficulty they experienced communicating in the following situations:

I. *At Home*
   1. Conversing with any child in another room
   2. Conversing with certain children when they are in another room
   3. Conversing with any adult in another room
   4. Conversing with certain adults when they are in another room
   5. Conversing with any child or adult in a quiet room
   6. Conversing with certain children or adults when in a quiet room
   7. Conversing with any child or adult in a noisy room
   8. Conversing with certain children or adults when in a noisy room
   9. Conversing in a room with a fan or air conditioner turned on
   10. Conversing while eating or drinking
   11. Enjoying music

12. Conversing with a child in a room with a radio or television turned on
13. Conversing with an adult in a room with a radio or television turned on

II. *Using a Telephone*
1. Using a telephone in a quiet room
2. Using the telephone when others are speaking in the same room
3. Using the telephone when a radio or television is turned on in the same room
4. Using a telephone in a generally noisy room (other than # 2 or # 3)
5. Using a telephone in an enclosed booth
6. Using a telephone in an open booth

III. *At a Social Gathering*
1. Conversing about the weather at a quiet party
2. Dancing at a party
3. Conversing while playing table games (i.e. cards, checkers, chess, etc.)
4. Conversing with a female adult in a noisy room
5. Conversing with a male adult in a noisy room
6. Conversing with a group of people in a noisy room
7. Conversing in a room with a moderately loud music background
8. Conversing with someone having a foreign accent or dialect

IV. *Other Situations*
1. Conversing in a moving automobile with the windows closed
2. Conversing in a moving automobile with the windows open
3. Conversing with a friend on a street corner
4. Placing an order with a waitress in a quiet restaurant
5. Conversing across the table in a quiet restaurant
6. Listening to a church sermon
7. Listening to someone talking to you from across the street
8. Conversing with a stranger on a street corner
9. Placing an order with a waitress in a noisy restaurant
10. Conversing across the table in a noisy restaurant
11. Understanding messages over the public address system in a supermarket, department store, or place of employment
12. Understanding messages over the public address system at a baseball game
13. Understanding a live theatrical presentation
14. Understanding a motion picture production

Nine reported "major" difficulty in most home situations. Eight had "major" difficulty in most of the telephone use situations. All had "major" difficulty in most social and other specified situations. The clinical implications for this group and other hearing impaired adults are self-evident.

Besides providing exercise in improving communication in difficult listening situations, the audiologist may also find it appropriate to discuss the advantages and disadvantages of alternate personal amplification systems, hearing aid arrangements, and modifications of radio, television and other communication systems for improved listening ease. Information concerning opportunities and services provided by allied health agencies may also be of interest to the hearing impaired adult.

The hearing aid orientation program is concluded when the new hearing aid user is functioning adequately in his everyday environment and he is prepared to assume major responsibility for further adjustment.

DISCUSSIONS

The contemporary hearing aid orientation program requires adherence to a specified "routine" in order for its results to be objectively observed and evaluated. This program attempts to quantify human behavior during hearing aid adjustment. The hearing impaired adult's prognosis for improved communicative functioning must be considered in terms of his total life style. Age, personality, and attitude are influencing variables.

Because our culture places high value on body integrity, the hearing impaired adult may not readily admit to a hearing handicap. The "older" adult experiencing fewer social contacts and other chronic medical conditions is generally not as well motivated toward accepting a hearing aid as the "younger" adult who continues to maintain an active social life, interest in learning, and a need to earn a livelihood. Unless the older adult's need for health, affection, recognition, and emotional security are fulfilled, he appears to be a less likely candidate for a successful hearing aid orientation program (Alpiner, 1965).

Ego functions also play an integral role in hearing aid adaptation. Because it takes time to integrate the hearing aid into one's body image, the hearing impaired adult's basic personality must be considered. Hearing loss may disturb his "way of life" or make him feel mutilated. The hearing impaired adult requires family and peer support to maintain high self-esteem and overcome depression often associated with a constantly distorted auditory environment. Support is particularly critical in instances where the type and degree of hearing impairment incurred precludes satisfactory improvement from the use of a hearing aid. He may find the aid physically as well as emotionally, irritating.

In the final analysis, the hearing impaired adult's attitude toward wearing the hearing aid may be the most important single criterion influencing the successful use of the aid (Kodman, 1961). To accept the

hearing aid, he must feel he is being helped by it. He accepts it as a "second choice" in remediating his hearing disorder. He must accept it despite the fact that it doesn't meet his aesthetic values. Therefore, the greater the observable difference in communicative performance with his aid, the greater the prognosis for acceptance of the aid.

The proposed hearing aid orientation program is designed to be completed within the one-month time period recommended for satisfactory hearing aid adjustment by Davis and Silverman (1970). Each phase allows the hearing impaired adult to receive information and develop proficiency in a logically progressing order. The program enables him to progress at his own pace and to experiment within and between sessions. Support in hearing aid adjustment is provided by the audiologist, the spouse (or friend), and hearing impaired peers as the new hearing aid user assumes greater responsibility. The initial sessions are structured to provide the hearing impaired adult with immediate success at a time when his willingness and motivation to improve are highest. The social atmosphere of the final sessions help alleviate possible depression at the time when the hearing impaired adult assumes major responsibility for further adjustment.

SUMMARY

A behaviorally based hearing aid orientation program for adults is presented. The program is designed to be completed in three phases. Each phase is formulated on logically progressing behavioral objectives. The criteria for satisfactory completion of each phase is specified. The program description provides examples of difficult communication situations for consideration in treatment. Program format allows the hearing impaired adult to adjust to his hearing aid at his own pace. It also allows the audiologist to effectively monitor the hearing aid adjustment process.

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